

### Abstract

An automatic transfer regulator for automatically switching between a primary (hose line) breathing air source and a secondary source (escape cylinder). A  
5 pressure sensing system detects the line pressure of the primary source using a spring loaded poppet connected to one side of a transfer poppet valve, with the other side connected to the output of a reducer. The pressure sensing system is fed by the primary source through an  
10 orifice. When the sensor detects loss of hose line pressure, the system pressure is released to ambient. This bleeds the pressure from the system side of the transfer poppet valve, allowing the reducer output to force the poppet back, thus actuating the secondary  
15 source. A check valve prevents reducer output from escaping through the primary source inlet.

20

25